

WHAT IS CLAIMED IS:

1.) A diffraction optical device comprising a first diffraction element and a second diffraction element arranged adjacent to each other,

wherein one of said first diffraction element and said second diffraction element has a positive power, the other has a negative power, and said first diffraction element reduces an incident angle of light upon said second diffraction element.

(2.) A diffraction optical device comprising a first diffraction element and a second diffraction element arranged adjacent to each other,

wherein said ~~first~~ diffraction element and said second diffraction element have blazed gratings having blazed shapes oriented in opposing directions, and said first diffraction element reduces an incident angle of light upon said second diffraction element.

3. A diffraction optical device according to Claim 2, wherein said first diffraction element and said second diffraction element are made of materials having dispersion characteristics different from each other.

4. A diffraction optical device according to any one of Claims 1 to 3, wherein an air layer is interposed between said first diffraction element and said second diffraction element.

5. A diffraction optical device according to any one of Claims 1 to ³~~4~~, wherein the light is a ray of off-axis primary light propagating through an optical system in which said diffraction elements are disposed.

6. A diffraction optical device according to Claim 5, wherein said diffraction elements are formed to have high diffraction efficiency for diffracted light of particular order over an entire wavelength range to be used in said optical system.

7. An optical system comprising a diffraction optical device according to any one of Claims 1 to ³~~4~~, and a refraction optical device.

8. An optical system according to Claim 7, wherein a wavelength range to be used in said optical system is a visible range.

9. An optical system according to Claim 7 ~~or 8~~,

further comprising an iris, wherein a first diffraction element of said diffraction optical device has a positive power, a second diffraction element of said diffraction optical device has a negative power, and said diffraction optical device is arranged in a position nearer to an image than said iris.

* 10. An optical system according to Claim 7 ~~or 8~~, further comprising an iris, wherein a first diffraction element of said diffraction optical device has a negative power, a second diffraction element of said diffraction optical device has a positive power, and said diffraction optical device is arranged in a position nearer to an object than said iris.

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